

CLAIMS

I claim:

- 1 1. A process for producing a heat insulating barrier which comprises:
 - 2 A) mixing into a resinous emulsion at room temperature a fire retardant until
3 homogeneity is obtained;
 - 4 B) mixing expandable graphite at room temperature with the product of step
5 A) until a homogeneous paste is obtained;
 - 6 C) extruding the composition of step B) at room temperature;
 - 7 D) drying the product of step C)

8 wherein the amount of expandable graphite in the product prior to extrusion is between from
9 about 5 to about 95% by weight, the amount of fire retardant in the product prior to extrusion
10 is between from about 1 to about 70% by weight and the amount of resinous emulsion in the
11 product prior to extrusion is between from about 25 to about 90% by weight.

- 1 2. The process of Claim 1, wherein the resinous emulsion of step A) further comprises
2 a defoamer wherein the amount of defoamer in the product prior to extrusion is between from
3 1 to about 50% by weight.
- 1 3. The process of Claim 1, wherein the resinous emulsion of step A) further comprises
2 an intumescent inorganic filler wherein the amount of inorganic intumescent filler in the
3 product prior to extrusion is between from about 1 to about 50% by weight.
- 1 4. The process of Claim 1, wherein the resinous emulsion of step A) further comprises
2 a surfactant wherein the amount of surfactant in the product prior to extrusion is between
3 from about 1 to about 50% by weight.
- 1 5. The process of Claim 1, wherein the fire retardant is a phosphate.
- 1 6. The process of Claim 5, wherein the phosphate is a C₂-C₈ alkyl diamine phosphate.

1 7. The process of Claim 1, wherein the expandable graphite contains NO_x or SO_x.

1 8. The process of Claim 6, wherein the flame retardant is ethylene diamine acid
2 phosphate.

1 9. The process of Claim 1, wherein the composition is extruded onto a flexible
2 substrate.

1 10. The process of Claim 9, wherein the flexible substrate is selected from wax paper,
2 polyester, polyurethane, mineral wool, polyethylene film, polypropylene film or is
3 cementitious.

4 11. The process of Claim 3, wherein the intumescent inorganic filler is clay.

5 12. The process of Claim 1, wherein drying is conducted at room temperature.

6 13. The process of Claim 1, wherein drying is by the addition of a chemical drying agent
7 to the composition prior to extrusion.

8 14. The process of Claim 1, wherein drying is by microwave irradiation.

9 15. A process for producing a heat insulating barrier which comprises:

- 1 A) dispersing into a resinous emulsion a C₂-C₈ alkyl diamine phosphate;
- 2 B) mixing expandable graphite with the product of step A) until a homogeneous
3 paste is obtained;
- 4 C) extruding the composition of step B) at room temperature;
- 5 D) drying the product of step C);

7 wherein the amount of expandable graphite in the product prior to extrusion is between from
8 about 5 to about 95% by weight, the amount of fire retardant in the product prior to extrusion
9 is between from about 1 to about 70% by weight and the amount of resinous emulsion in the
10 product prior to extrusion is between from about 25 to about 90% by weight.

1 16. The process of Claim 15, wherein the composition is extruded onto a flexible
2 substrate.

1 17. The process of Claim 15, wherein the C₂-C₈ alkyl diamine phosphate is ethylene
2 diamine acid phosphate.

1 18. The process of Claim 16, wherein the flexible substrate is wax paper, polyester,
2 polyurethane, mineral wool, polyethylene film, polypropylene film or is cementitious.

1 19. The process of Claim 15, wherein subsequent to step C), a flexible protective
2 sheath is applied onto the extruded layer.

1 20. The process of Claim 15, wherein drying is conducted at room temperature.
2